

Pyeloplasty 腎盂成形術

What is pelvi-ureteric junction obstruction?

Pelvi-ureteric junction (PUJ) obstruction is a condition when there is blockage in one of the ureters at the level where they meet the kidneys, resulting in dilated renal pelvis and collecting system (hydronephrosis). A significant proportion of PUJ obstruction occurs in childhood. However, PUJ obstruction can present clinically at any time of life. Possible clinical presentation of PUJ obstruction includes intermittent flank or abdominal pain, hematuria or upper urinary tract infection.

The cause of the PUJ obstruction is an abnormal segment of ureter at the PUJ, causing obstruction to the urine flow across it. In some cases, there may be presence of an aberrant blood vessel at the level of obstruction as a contributory factor. In rare cases, PUJ obstruction arises secondary to other pathologies such as polyps, stones, ureteric cancer or scarring from previous inflammation or trauma.

If left untreated, PUJ obstruction can cause prolonged hydronephrosis and irreversible damage to the obstructed kidney. There is no medical treatment available for PUJ obstruction and most cases of PUJ obstruction in adults require surgical correction.

What is a pyeloplasty?

A pyeloplasty is an operation to remove the abnormal and narrow part of the ureter where it meets the kidney and to reconnect the ureter back to the kidney. The operation is carried out under general anesthesia and can be performed either by the open or laparoscopic approach. Surgery usually takes about two to four hours. You may stay in the hospital for up to several days after this operation.

Laparoscopic pyeloplasty

In general, a small cut (incision) is made at the umbilical or flank region and a laparoscopic port is inserted. A laparoscope (telescope) is then inserted into the abdomen after it is blown up by carbon dioxide gas. Laparoscopic instruments are then inserted via other smaller cuts in the abdomen for the pyeloplasty surgery. After the procedure, a tube may be left inside the ureter and/or abdomen temporarily to help with healing. The procedure may take longer time than conventional open surgery, but you may benefit from shorter hospital stay, earlier return to normal activities and better wound cosmesis from the laparoscopic approach.

Robot-assisted laparoscopic pyeloplasty

The operation may also be performed laparoscopically using assistance from a surgical robot.

Open pyeloplasty

Sometimes the surgeon will not be able to carry out an operation using the keyhole method for various reasons, for example, unexpected findings, technical difficulties, etc. If this is the case, the surgeon will carry out the operation using a larger incision (cut) in your flank over the kidneys.

Laparoscopic vs open pyeloplasty

The blockage can either be removed using keyhole surgery (laparoscopy) or traditional open surgery with overall success of 85-100%. Your surgeon will discuss with you which method is most appropriate for you.

Preparation before surgery

You may need to have various tests and investigations. After admission, you can discuss the operation in detail with the surgeon before signing the consent form. An anesthetist will also visit you to explain about the anesthetic risk and pain relief postoperatively. On the day of the operation, you should not eat or drink for the time specified by the anesthetists. Please follow these instructions otherwise the operation may need to be postponed or even cancelled.

Care after surgery

It is important to have proper postoperative patient care as this would affect the overall success of the surgery.

1) Feeding

You may be able to eat and drink a few hours after the operation. For those having inadequate oral intake, intravenous fluid may be required. In the days after the operation, you should drink plenty of fluids to flush out the kidneys.

2) Wound care

There shall be one to a few dressings over the belly which stays on for about a week after surgery. The stitches are may be absorbable, and in that case they do not need to be removed. Otherwise you should have the stitches removed at the time specified by your doctor. It is fine for you to have a shower after the operation, but try to avoid long baths as this may cause some wound problems.

3) Urinary or Foley catheter

A urinary or Foley catheter, which goes through the urethra and into the bladder, will be in place for one to a few days after your surgery. All the urine that would normally be stored in the bladder drains out through this tube into a urine bag. The catheter will be securely taped to your leg.

4) Double-J (JJ) catheter or percutaneous nephrostomy (PCN) tube

You may also have another plastic tube that sits inside your urinary system. It could be placed inside your tummy (JJ catheter connecting kidney and bladder) or brought out from the back (PCN tube) so as to give time for the ureter to heal. PCN tube is usually removed at the bedside in ward soon after the operation. For those having JJ catheter, it will be removed with a brief cystoscopy (passing a small telescope into the bladder through the urethra) under topical anesthesia a few to several weeks later, after you have completely healed.

5) Abdominal drain

Occasionally, a drain may be attached to the belly, close to the incision. It takes away extra fluid that may have collected during surgery. It will be stitched in place and is usually removed before you go home.

6) Wound pain control

It is quite normal for you to feel uncomfortable in the early days after the operation. There are several ways to control your pain. Pain medication can be given by mouth, directly through your intravenous tube or injected intramuscularly. The nurse will check your pain control regularly and you can feedback to us if you think your pain is not being well managed.

7) Bladder spasm management

Catheters and tubes may irritate the bladder and cause spasms (sudden tightening of the

bladder), which can be quite painful. If you have painful bladder spasms, you will be given a special drug which helps the bladder relax and reduces the pain.

8) Antibiotics

Usually intravenous antibiotics will be given in the initial postoperative period. After you go home, you may be advised to continue to take the antibiotics orally to prevent any infection from developing.

9) Ambulation, discharge and follow-up plan

You are encouraged to get up and move around after surgery although vigorous exercises should be avoided. You shall be discharged from the hospital as appropriate and come back for follow-ups. You can resume normal activities when you feel well again. Follow-up imaging studies and shall be arranged at the out-patient clinics. You should call the ward or your family doctor if you believe there are problems related to your wound or your general well-being.

Complications

Overall, pyeloplasty is a safe operation and serious complications are uncommon. Nevertheless, a number of potential complications may occur. You should discuss with your surgeons should these complications arise:

General

1. Bleeding
2. Wound complications e.g. infection, hematoma, dehiscence, incisional hernia, etc
3. Hypertrophic scar

Specific

1. Urine leakage
2. Pyelonephritis
3. Recurrent PUJO obstruction
4. Cutaneous fistula

Rare but significant (if any)

1. Injury to major vessels, small bowel, large bowel, omentum, ovary, fallopian tube, urinary bladder
2. Torrential bleeding

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.